



UNITED STATES PATENT AND TRADEMARK OFFICE

KLM
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/675,277 | 09/30/2003 | Thomas A. Mitchell | 10020903-1 | 5461 |

7590 01/28/2005
AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
P.O. Box 7599
Loveland, CO 80537-0599

EXAMINER

PENG, CHARLIE YU

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2883

DATE MAILED: 01/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/675,277

Applicant(s)

MITCHELL ET AL.

Examiner

Charlie Peng

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 11 and 14 is/are rejected.
- 7) ☒ Claim(s) 5-10, 12, 13 and 15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/30/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/15/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

The drawings Fig. 7 and Fig. 8 are objected to as failing to comply with 37 CFR§1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 660, 670, and 680. (Page 18 of disclosure)

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 11, 14 are rejected under 35 U.S.C. §102(e) as being anticipated by Nishi et al. Nishi et al. teach an optical switch having 4 columns of switch elements (Fig. 2), each switch (S00-S33) is capable of receiving and transmitting optical signals. The switches (S00-S33) are crossbar switches capable of directing light signal in one of two directions: cross state or through state. Since this is a two dimensional configuration, all received and transmitted optical signals are substantially in a same plane. For example, when examining a matrix of switches including S02, S13, S12, and S00, the two switching elements can be seen as S02/S13 and S12/S00, and each switch can be considered a section. Light path #0 enters at S02 (1st element, 1st section) and is directed to S00 (2nd element, 2nd section), and similarly, light path #1 enters at S13 (1st element, 2nd section) and is directed to S12 (2nd element, 1st section). All light paths (#0~#3) can be directed to an output element that includes S30, S11, S22, and S03. Although Nishi et al. do not teach a free space propagation region, it is inherent that the optical space switch has no optical elements between the switch elements as light transmitting media.

Referring to claim 3, Nishi et al. teach an embodiment 19 that has multiple layers of mxm optical space switch elements stacked one on top of another to form a switching block 26.

Referring to claim 4, Nishi et al. teach a switching block 27 comprising multiple layers of stacked optical space switch elements. Since the elements of the switching block 27 are placed substantially perpendicular to those of the switching block 26, it is inherent that a light beam outputted by an element in the switching block 26, which

Art Unit: 2883

subsequently enters the switching block 27, is deviated in a direction having a component perpendicular to a plane containing the initial incidental and transmitted beams in the switching block 26.

Allowable Subject Matter

Claim 5 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 5 and 12 disclose that the optical switching is accomplished by blazing a switchable grating (or controlling a fringe tilt angle of the grating). This technique was only previously disclosed in U.S. Patent 6,795,601 to Mitchell et al. with a common assignee, and USC 103(c) precludes the patent as a prior art as part of a USC 103(a) claim rejection.

Claims 6, 7, and 13 are objected to as being dependent upon a rejected base claim 1, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Nishi et al. teach the invention except for the optical switching having elements numbering 1 more than sections, and the extra element is an output directing element. It is the examiner's opinion that the prior art of record, taken alone or in combination, fails to disclose or render obvious in combination with the rest of the limitations of the base claim.

Claims 8-10 and 15 are allowable by virtue of being dependent claims of objected to but allowable base claims.

Art Unit: 2883

Conclusion

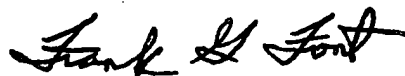
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,748,130 to Oikawa.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlie Peng whose telephone number is (571) 272-2177. The examiner can normally be reached on 8:30 am - 5 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charlie Peng
Charlie.Peng@uspto.gov



Frank G. Font
Supervisory Patent Examiner
Technology Center 2800